

ABSTRACT

A rotary expandible chamber device includes a sealable shell member with a hollow interior and a cylindrical stator member, with stepped interior surface, rigidly secured interior the shell member. A cylindrical rotor member is positioned concentrically interior the cylindrical stator member, forming a plurality of chambers with the stator member's continuously stepped, interior surface. The rotor member is supported by a central shaft member rotatably secured to the shell member. The rotor member includes a plurality of radial channels with outlets at the rotor member's periphery, adjacent the stator member's stepped interior surface. The radial channels are in fluid communication with a channel interior the central shaft member. A planar collar member is fastened to each side of the rotor member. The collar members essentially cover the cylindrical stator member circumferential to the rotor member. The collar members include a plurality of apertures offset from the radial channel outlets of the rotor member. A pressurized working fluid, flowing into the central shaft member's channel and through the rotor member's radial channels to the channel outlets, impinges on the stator member's stepped surface, thereby imparting rotational movement to the rotor member and attached central shaft. The spent working fluid vents from between the stator member and rotor member, via the offset apertures in the collar members, and is contained within the shell member